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This host was determined from fragments by John Donnell Smith, who expresses some doubt as to the correctness of the specific name. With the exception of two species of *Aecidium* from South America, described by P. Hennings, this is the only rust reported on a host belonging to this family, *Sterculiaceae*, or any closely related family. No other spore structures being present the species is described as *Uredo*. The thickened apex of the spores, the intermixed paraphyses, and the gross appearance of the sori indicate that its relationship is with the *Raveneliatae*.

The name is to honor Sn. Manuel Estrada Cabrera, President of Guatemala, patron of education and applied science.

#### 40. *UREDIO TRIXITIS* Kern & Kellerm. sp. nov.

II. Uredinia hypophyllous, scattered, small, round, 0.3-0.5 mm. across, soon naked, becoming somewhat pulverulent, dark chestnut brown, ruptured epidermis conspicuous; without peridium or paraphyses; urediniospores broadly ellipsoid, sometimes somewhat narrowed below,  $19-24 \times 25-30 \mu$ , wall light chestnut-brown, medium thick ( $2-3 \mu$ ), sparsely and rather inconspicuously echinulate, pores distinct, 2, opposite.

On *Trixis frutescens* P. Br. (host no. 5204), San Lucas, Depart. Sololá, Feb. 15, 1906, no. 5432.

This host was determined by J. M. Greenman and belongs to a section of the *Carduaceae* which does not include any other genera known to bear rusts.

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## THE LEPIOTAS OF SWEDEN.

H. C. BEARDSLEE.

The following notes on the species of *Lepiota* collected in Sweden by Mr. C. G. Lloyd and the writer during the summer of '05 may be of interest in connection with the papers upon this genus which are appearing in the JOURNAL.

The number of species collected was not large, probably partly at least because work was necessarily stopped the first week of September. Doubtless other species might have been found in the same collecting grounds if work had continued a few weeks longer. The species detected were six in number. *L. procera*, *naucina*, *rhacodes*, *cristata*, *metulaespora*, and *amiantina*. Of *Lepiota procera* little need be said. It was found in the same surroundings in which it would have appeared in the United States and agreed with our plant in every detail. There is, however, food for reflection in the fact that this fine species which lends itself so well to description and illustration that it is easily recognized, even by the amateur, has been reported from so many stations and is known to have so wide a distribution.

Is it not at least possible that some of its relatives are also widely distributed, but owing to the greater difficulty of their recognition, are not so widely recognized? It is hard for one whose views on "new species" are perhaps a little "cranky" to account otherwise for the facts, for instance, in regard to *L. seminuda*. This pretty species is abundant at Asheville, perhaps the most abundant species of *Lepiota*. Specimens and photographs have been seen by Bresadola who has verified the determination, and pronounced it correct in every detail. Still this species so far as I know is reported by only one collector, Prof. Morgan finding it at Preston. I greatly suspect that several of our new species will be found on further investigation to be referable to this abundant and variable species.

*Lepiota rhacodes* is a beautiful and striking species. As we found it it is large and robust, with a rounded almost hemispherical pileus, whose flesh is remarkably thick and firm, and which is covered with large strongly revolute scales, which render it very striking. It is at once recognized by the student of the group at first sight. The flesh and gills reddens when bruised as in *L. Americana*, but the red color is not as bright and the change is slower. This species is doubtless rare in the United States. I have never seen anything even approaching it, though it has been found in New England. Cooke's figure is not good, but it will easily be recognized when found from the description.

*Lepiota naucina* was found only once, but then in some abundance in the parks at Stockholm. It is of course in outward appearance like our own *L. naucinoides*. The main point of interest was the form of the spores, as Fries stated that the spores of his species were round, which has led to the separation of our species in which the spores are elliptical and apiculate. Upon examination the spores were found to be identical with those of the American plant, and there can be no question that *L. naucina* as it is at present known to European mycologists is identical with *L. naucinoides*. It seems hardly probable that the traditional plant has been incorrectly determined. It is much easier to believe that the form of the spores was originally given incorrectly. The species is plentiful in Sweden and is, so far as I could learn, universally recognized as Fries' species.

*L. cristata* and *L. amianthina* need no comment. They were in agreement with the plants known by the same names with us.

The last species to appear at Drottningholm was an old friend, which is abundant at Asheville, and quite generally distributed in the U. S. It belongs to a group whose status is at present unsatisfactory, the *Clypeolaria*e. Our species need further examination and comparison with well authenticated specimens of the European species before we shall be certain of their identity. The species found is known in Europe as *L. metulae-spora*. Fries considered it the same as Bulliard's species, *L. cly-*

peolaria, and so published it. Bulliard's plant is, however, different. It occurs in Sweden but is not as common and in spite of careful search I failed to find it. It is said to have a darker umbo and shorter spores than the true *L. metulaespora*. The plants we found were well marked by their soft appressed tomentose pileus, flocculose veil, and long spores. These were 15-20 x 5-6 mic., and were spindle shaped. The Asheville specimens have slightly shorter spores but agree in all other details with the Swedish plants. At Asheville there are three species of *Lepiota* belonging to this group, *L. metulaespora*, *floralis* and a third species upon which I am unwilling at present to express an opinion. Possibly it may prove to be the true *L. clypeolaria*, though it seems at present doubtful. *Lepiota floralis* occurs rarely in open sandy ground and seems to correspond well with Ravenel's plant, which was found in his garden from which he distributed at least three other new species, *L. oligosarcus*, *fulvaster*, and *psilopus*. These are all small species and from the specimens examined can not be well understood. I have examined two of Ravenel's specimens of *L. floralis*, one in very good preservation at Washington, the other in the herbarium at Biltmore. The spores in the latter were examined and were rather larger than the measurements given by Morgan, being 11-13 x 4-5 mic. and spindle shaped. It is worth suggesting that this species needs further investigation before its status can be considered satisfactory. The conditions under which it is found suggest very strongly that it is only a depauperate form of *L. metulaespora*. An almost unbroken series of forms can be found in this region connecting the two species, and the points of difference are such as may well be explained by the fact that one form is found in sheltered places in woods and the other in sterile sandy soil in open places.

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## NEW GENERA OF UREDINALES.

BY J. C. ARTHUR.

As the rusts are more carefully studied, and increased attention is given to the minute details of their structure, it becomes possible to find characters which enable one to group the species under genera that show relationship better than by the earlier method of using some obvious character to place many diverse forms under a few genera. The rusts are minute plants, and the diagnostic characters must be sought for with a corresponding minutia. In addition to the strictly morphological characters, the recognition of the invariable relation of the pycnia to the other spore-forms, by which it is possible to judge with much certainty of the nature of the life-cycle, has made it feasible to draw from